PSYC305 Midterm 1 Study Guide

Please use this as a general guide (not and exhaustive list of questions that will be tested).

- History of cognitive neuroscience
  - What is cognitive neuroscience
  - The mind body problem
  - Phrenology
  - Holism vs. localizationalism
    - Broca and Wernicke
- Functional neuroanatomy
  - Landmarks: four lobes, gyri and sulci (e.g. ,central sulcus), orientation references (e.g., coronal)
  - How Brodmann's areas are defined
- Methods of cognitive neuroscience
  - Methods of stimulation or imaging
  - Weaknesses and strengths of each method
  - Single vs. double dissociation
  - Basics of how each stimulation method works
  - Principles of choosing research methods (e.g., where vs. when)
- Neuroscience
  - Parts of the neuron
    - Input and ouput
  - Myelin
  - Nodes of Ranvier
  - Saltatory conduction
  - Parts of the synapse
  - Action potential
    - How the threshold is reached
    - All or none
  - Vesicles
  - Synaptic receptors
- Sensory perception and visual hierarchy
  - Visual pathway from eyes to visual cortex
  - Organization of V1
  - Functional specialties of MT and V4
  - Cortical plasticity/reorganization
  - Illusory filling-in
  - Emotions and perceived brightness
- Object recognition
  - What vs. where/how pathways
  - Grandmother cell vs. ensemble coding
  - Agnosias
  - Face processing

- Hemisphere asymmetry
    - Split brain patients
    - Language
    - Visuo-spatial
    - Visual search
    - Ventral pathway
    - Dorsal pathway
- Attention
    - What is attention?
    - Bottle neck metaphor
    - Voluntary vs. reflexive
    - Overt vs. covert
        - Helmholtz experiment
    - Early vs. late
        - EEG
        - fMRI
        - Stroop
    - Feature vs. conjunction search
    - Feature integration theory
    - Spatial neglect